

IVG-7000

- Unparalleled video routing capacity • Joint Transrating with HDTV support
- Multiple output transport streams • IP streaming over Gigabit Ethernet
- BoB™ de-jittering technology • DVB scrambling and Simulcrypt v.3 support
- PSI/SI and PSIP generation / insertion • DVB & ATSC standards supported
- Supports VOD, nVOD • Seamless digital ad insertion



IVG-7000 Series Intelligent Video Gateway

General



The IVG-7000 series is part of Scopus' 4th generation product line, offering a new and sophisticated video routing and processing platform. It is the cornerstone of Scopus' IVN™ (Intelligent Video Network) headend architecture, which provides a powerful yet cost effective solution for the delivery of digital TV. It empowers service providers to deploy broadband, broadcast and on demand services over their infrastructure.

The IVG-7000 series features 4 distinct product lines:

- IVG-7100 Intelligent Headend Video Gateway
- IVG-7200 Intelligent Edge Video Gateway
- IVG-7300 Intelligent Video Remultiplexer
- IVG-7400 Intelligent Broadband IP Streamer

Features

- Multiple inputs and outputs (ASI, GbE) providing full video routing and grooming to the PID level
- Networking support for the routing of video and data over IP/ATM infrastructure
- Seamless clustering of multiple IVG-7100 devices using a standard GBE switch, with single entity management

- Digital to digital processing including:
 - Bit Rate shaping (SD & HD)
 - Joint Transrating (JT) - statistical remultiplexing for bandwidth optimisation of multiple video services
 - VBR/CBR rate shaping
 - Seamless splicing for digital program/ad insertion
- Full headend integration, including CA integration as well as PSI/SI and PSIP generation, processing and insertion
- Built-in DVB-Scrambling and Simulcrypt 3 support
- Support for on demand applications – VOD, NVOD, time shifted TV
- Distributed architecture using Scopus BoB™ (Broadcast over Broadband) technology for video routing, networking and packet de-jittering
- IVN™ end to end network management, down to service and PID level, fully based on SNMP protocol
- Advanced redundancy solutions eliminating the need of external matrix, using the IVN™ headend architecture
- Slim-line 1RU design with remarkable port density:
 - 12-16 ASI inputs
 - 2-6 ASI outputs
 - Gigabit Ethernet port (input/output)
- Aggregate input rate 2.5 Gbps and output rate 2 Gbps
- Broadband IP streaming for Telco contribution, distribution and DTH applications

IVG-7000 SERIES APPLICATIONS

IVN™ Headend and distributed backbone solution using IVG-7100, IVG-7200

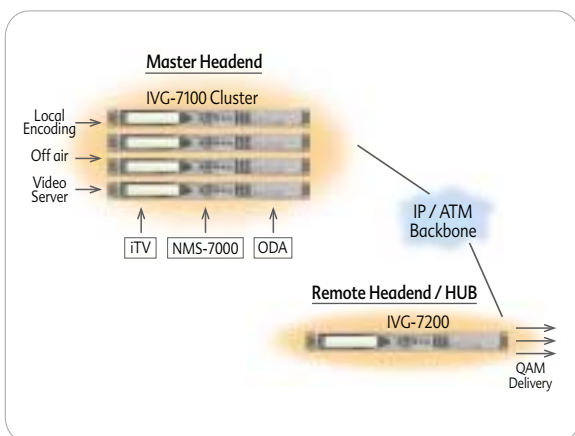
IVG-7100 Scalable Headend-in-a-Box

The IVG-7100 Video Gateway provides a Scalable Headend-in-a-Box solution for the most advanced headend services. Multiple units may be clustered over a GbE switch and managed as a single entity. It supports hundreds of services, video processing such as joint transrating and digital program insertion, interfacing with essential headend components and enabling advanced personalized services, while optimizing bandwidth utilization and simplifying network management.

IVG-7200 Intelligent Edge Device

The IVG-7200, located at remote hubs and secondary headends, is used as the edge device in the distributed solution of video Broadcast over a Broadband network (typically IP).

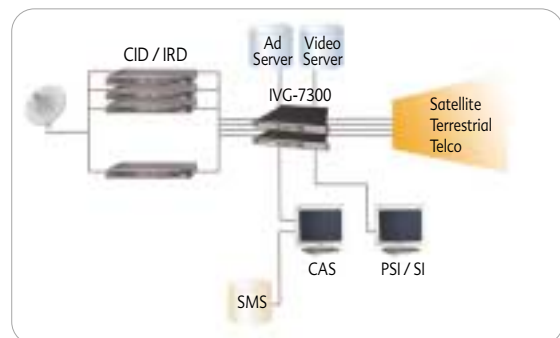
The Intelligent edge device provides a cost effective edge solution, and offers an entire range of advanced processing capabilities such as grooming, transrating and VOD support, as well as high quality broadcast level QAM modulation and up-conversion. IVG-7200 uses BoB™ (Broadcast over Broadband) de-jittering technology to overcome typical network jittering.



Intelligent Digital Turnaround using IVG-7300

IVG-7300 Intelligent Video Remultiplexer

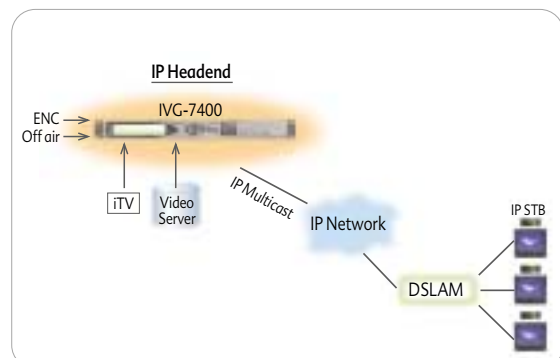
IVG-7300 provides powerful digital processing, bit-rate reduction, flexible grooming, statistical remultiplexing and extensive TS monitoring. The comprehensive DTA solution offered by the IVG-7300 includes PSI/SI and PSIP processing, EPG insertion, CA systems integration and personalized services such as ad insertion, Pay Per View and more.



Broadband IP streaming for Telco DTH using IVG-7400

IVG-7400 Intelligent Broadband IP Streamer

IVG-7400 is a fully featured broadband IP streamer, providing grooming and delivery of Digital TV content over IP networks for TV over DSL or FTTH networks. It supports hundreds of TV services, transported at wire-speed over its Gigabit Ethernet output.



IVG TECHNOLOGY EDGE

Video routing and processing

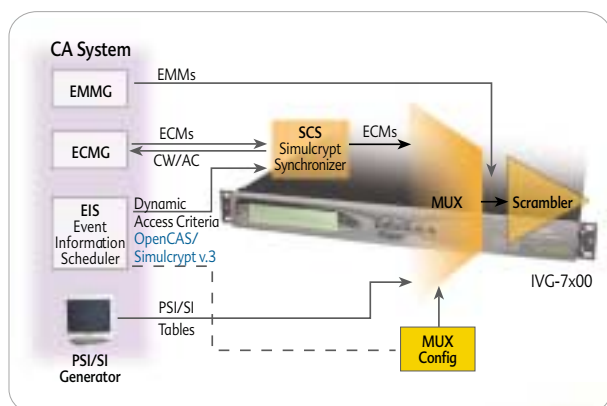
Featuring a breakthrough patent pending network processing technology, the IVG-7000 platform is capable of processing up to 4 Gbps of video and data, all in a 1RU enclosure. IVG-7100 units can also be clustered over a GBE switch, while maintaining management as a single entity. This allows significant scaling up in processing power, for the aggregation of hundreds of streams and services.

Transrating and Joint Rate Allocation (JRA)

Best of breed digital video processing such as transrating and statistical remultiplexing on any of its outputs is provided by IVG. The JRA (Joint Rate Allocation) capability enables combining rate controlled local encoders with transrated DTA services in the same statistical multiplexing group. These capabilities can also be brought down to the edge of the network, offering the most flexible and efficient bandwidth allocation and management.

Conditional access and headend interfacing

The IVG-7000 features built-in DVB scramblers per each output and seamless integration with conditional access systems using Simulcrypt open system architecture. The IVG provides full Simulcrypt v.3 functionality for interfaces with ECM and EMM generators, as well as EIS (Event Information Scheduler) and PSI/SI generators. Adding its flexible PSI/SI generation and insertion capabilities, the IVG-7000 forms the ultimate headend unit for today's and tomorrow's digital video applications.



On Demand solutions

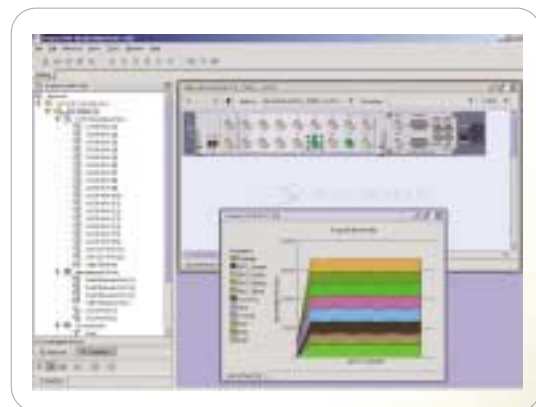
Utilizing DSA™ dynamic session allocation technology for optimized use of bandwidth resources to balance broadcast and on-demand services, IVG-7000 is designed to integrate with VOD, sVOD, and NVOD servers and on-demand applications.

Digital Program Insertion

Seamless splicing as well as support of DPI standards SCTE 30 (DVS-380) and SCTE 35 (DVS-253) enable the IVG-7000 series compatibility with major ad server providers, for an integrated ad insertion solution.

IVG-7000 Element Management

IVG provides best of breed management both in the element and network levels. It is fully SNMP manageable, and together with the NMS-7000



Network Management System, provides an end-to-end management solution on both element and service level. IVG-7000 offers ease of use, providing the user a friendly hierarchical representation of content and network resources, and making configuration, control and monitoring easy to operate yet powerful and feature rich.



IVG-7000

Product Specifications

Input Interfaces

- 12-16 ASI inputs (MPTS/SPTS) – DVB or ATSC
- Up to 170 Mbps data rate per ASI input
- Aggregate input rate 2.5 Gbps

Output Interfaces

- 2-6 independent ASI outputs – DVB or ATSC
- Up to 170 Mbps data rate per ASI output
- Output mirroring on any free output
- Aggregate outputs rate 2 Gbps

Network Interfaces

- Gigabit Ethernet (GbE) port, 1000BaseSX (SFP-LC)
- Full rate, full duplex input and output
- IP streaming UDP/RTP unicast/multicast

Management Interfaces

- 3 independent 100BaseT interfaces for management and external systems (CA, PSI/SI, NMS, Telnet)
- 10BaseT management interface
- RS-232 / Modem for Command Line Interface
- Dry contact alarms (GPI) - 2 inputs, 2 outputs

Clocking

- Clock reference output - 27MHz
- External clock input - 27MHz, 10MHz (GPS)

Video Routing / Remultiplexing

- Stream, Service and Component level grooming from any input to any output (VBR, CBR)
- PID level filtering and remapping
- High accuracy PCR restamping
- PSI/SI and PSIP static/dynamic processing
- Routing capacity of up to 400 services per unit

Transrating

- Transrating resource bank allowing flexible transrating – any input to any output
- Up to 96 services transrated (rate dependent)
- VBR, CBR inputs and outputs

Statistical Remultiplexing

- Joint transrating (JT) based on advanced rate shaping and resource allocation algorithms
- Priority assigned per service
- Pass-through services (VBR, CBR) support

Conditional Access

- Built in DVB scrambler per output (up to 100Mbps)
- Simulcrypt interface with all leading CA vendors
- Simulcrypt 3 and OpenCAS support for iPPV application
- Multi Channel BISS Scrambling

Digital Ad Insertion

- Seamless splicing in the digital domain
- DPI standards SCTE30/35 for cueing and API Device management

Device Management

- SNMP-based Element Manager System (EMS)
- Graphical front panel control and monitoring
- Powerful command line interface (CLI) – remotely over Telnet or locally over RS232

Transport Stream Monitoring

ETR-290 compliant transport stream monitoring on all interfaces

Physical / Power

- 1RU unit, 19" rack mountable
- Dimensions (HxWxD): 44 x 482 x 597 mm
1RU x 19" x 23.5"
- Weight: 9 Kg
- Voltage: 90-260 VAC, 50/60 Hz
-48 VDC (Optional)
- Power consumption: 100 W max

Compliance

- EMC:
 - CE, FCC part 15 (class A)

Safety:

- CE, CB (TUV), cTUVus, UL60950

Environmental Conditions

Operation:

- Temperature: 0°C - 50°C
- Humidity: 5% - 85% non-condensing

Storage & Transportation:

- Temperature: -40°C - 70°C
- Humidity: 0% - 95% non-condensing

Ordering Information

IVG-71xx:

- IVG-7102:
 - Up to 16 ASI inputs, 2 outputs, GbE port

IVG 7106:

- Up to 12 ASI inputs, 6 outputs, GbE port

IVG 72xx:

- Not Applicable yet

IVG-73xx:

- IVG-7304:
 - Up to 16 ASI inputs, up to 4 ASI output streams

IVG-74xx:

- IVG-7402:
 - Up to 16 ASI inputs, 2 ASI outputs, GbE port for IP streaming

Hardware Options:

- Transrating modules (up to 4 per unit)

Software License Options:

- DVB Scrambling and Simulcrypt (per output stream)
- Number of ASI output streams
- Number of ASI inputs: 4, 8, 12 or 16
- Number of services over GbE

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